

THE ORCHIDARIUM AND EXPERIMENTAL GARDEN AT YERCAUD

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INTRODUCTION

About the early Nineteen hundred and sixties Botanical Survey of India opened three National Orchidaria and five Experimental Gardens in the country with a view to conduct critical studies on all aspects of orchids of India and on other plants of interest of Experimental Botany, a field very much neglected in the past. The National Orchidarium and Experimental Garden for South was opened in 25 acres of forest land in Sanyasimalai Reserve Forest of Shevaroy Hills, Salem District, Tamil Nadu during May, 1963.

Yercaud in Shevaroy hills enjoys a celubrious climate with very equitable temperature and receives both South West and North East monsoon. The annual rain-fall averages to 150 cm; temperature varies between a minimum of 11°C and a maximum of 30°C. Though the major vegetation in the hills is of dry deciduous mixed type, a few patches of semi-evergreen sub-tropical hill forests are also seen. The Orchidarium and Garden area in Yercaud comprises of a patch of semi-evergreen forest. About 2050 well grown trees are identified under 58 species from this area and also about 10 species

of wild orchids. The area is having an altitude range between 1380 m and 1470 m.

SCIENTIFIC WORK

Orchidarium : 7476 sets of orchids in 179 spp. have been collected and cultivated. An orchid Herbarium of the species cultivated is being maintained. Compost and container efficiency studies for various species of orchids were carried out with 14 combinations and certain standard container and compost combinations have been found to be very good for cultivation of different groups of orchids, such as :

i. For terrestrial orchids, pot mixture of two parts of loam, one part of leaf mould and one part of a mixture of equal quantity of brick and charcoal powder, has been found to be good. The pots are generally with more drainage holes. Some times pieces of bricks and charcoal are top-dressed. The same combination put in trenches also is found to be very efficient.

ii. Epiphytic thick leaved orchids have been found to grow efficiently in a well drained pot mixture of one part of leaf mould, one part tree fern chopping or rough bark chopping, one part of brick pieces and one part of charcoal. These also established

well directly on rough barked trees are log pieces.

iii. Epiphytic delicate orchids have been found to thrive very well in a mixture of two parts of leaf mould, two parts of tree fern or rough bark choppings with a top dressing of one part charcoal and brick mixture in equal proportion. It is felt that there is need for more detailed studies on this field for better understanding of compost and container efficiency in case of orchids. Manure is very rarely supplied to orchids. Certain nutrient chemicals were tried for some time which did not meet with any advantage.

Collection of details of cultivation on various species of orchids including phenological data have been made for a period of seven to ten years and the same is being compiled for publication. Different methods of propagation in orchids have been tried and have achieved success in establishing some endangered and rare species of orchids in large numbers, namely :—

Acanthophippium bicolor, *Calanthe masuca*, *C. verattifolia*, *Aerides crispum*, *Epidendrum radicans*, *Dendrobium aqueum* and species of *Habenaria*. Intergeneric and interspecific hybridization trials among many species of orchids have been conducted. Among 643 experiments conducted during the period fruits setting was noticed in 59 cases. Orchid seed culture experiment in 124 flasks was conducted achieving germination in about 40 cases. We could obtain seedlings upto four inches and upto an age group of 18 months in some cases. Better transplanting methods are to be developed for complete success in this field and efforts are being made towards this goal.

At present the Orchidarium has ventured in the following scientific works such as : Cultivation, propagation and flowering behaviour of orchids of South India in

National Orchidarium at Yercaud, systematic studies in genera like *Disperis*, *Aerides* and *Cymbidium* occurring in South India, on seed studies of about 54 species of orchids, Embryological studies in a few important species of orchids and on stomatal studies on species of *Coelogyne*, *Dendrobium* etc., papers on these lines are under preparation.

Thorough scientific studies on various species of orchids revealed interesting scientific problems for future studies such as :— revision of genera like *Malaxis*, *Liparis*, *Disperis*, etc., among terrestrials and *Aerides*, *Vanda*, *Acampe*, *Rhynchostylis* etc., among epiphytes.

Experimental Garden : The area of this is divided into 6 divisions namely :

- a. Experimental plants section
- b. Economic plants section
- c. Foreign plants section
- d. Indian plants section
- e. Local plants section and
- f. Ornamental plants section including National Orchidarium.

About an acre of land is earmarked for office, Herbarium, Laboratory, Library and staff quarters etc. A master plan has been prepared as guide line for future works.

Some of the works carried out in this garden are collection identification and incorporation into the regional Herbarium at Coimbatore, 200 species of plants in 312 field numbers; survey plotting on contour map, identification and conservation of 2050 trees in 58 species; soil conservation measures through soil binding grass, construction of retaining wall etc.; improvement of irrigation facilities, water supply, fencing the area, planting creepers etc.; introduction of about 780 species in 360 genera including medicinal plants, ferns, bulbous plants, succulents, palms, wild showy flowering plants and other

ornamental foliage and flowering plants ; maintenance of a seminum comprising seeds of about 450 species of plants ; maintenance of a Herbarium of these species ; introduction of wild species of *Musa*, *Citrus*, *Psidium*, members of *Vitaceae*, *Dioscoriaceae* ; cultivation and conservation of about 60 species of rare and endangered plants ; seed germination trials ; works on *Decaschistia crotonifolia* Wt. & Arn.—a promising fibre yielding plants and so on.

Supply of information, plant material

etc., to various scientific institutions, extension of help in formation of a District Museum, Agri-Horticultural Society etc. and participation in local Flower shows are yet a few other activities of this garden.

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